



ARMED FORCES INSTITUTE OF PATHOLOGY

ANNUAL REPORT 1999

AFIP



NATIONAL MUSEUM OF HEALTH AND MEDICINE, AFIP

Adrienne Noe, PhD
Director
Date of Appointment—September 1995

MISSION

The Office of the Director oversees the general activities and governance of all aspects of the Museum and provides policy, technical, and scientific direction. This office directs all activities for the site, facility, and programs of the Museum as its planning evolves. Activities handled within the office are external relations, governmental affairs, press and public relations, and institutional development. The office works with print and broadcast media, congressional offices, and local, national, and community organizations to encourage contact with and coverage of AFIP's National Museum of Health and Medicine. We seek to emphasize the Museum's focus on critical public and military health issues, the importance of the Museum as a bridge between biomedicine and the general public, the Museum's role in helping to recruit the health professionals of tomorrow, and the Museum's research programs in medical medicine, medical imaging, and other areas. The office provides general supervision of the Office of Public Affairs, the Division of Programs and Exhibitions, and the Division of Collection and Research. The Office of the Director communicates and coordinates with the American Registry of Pathology (PL94-361) and numerous public and private organizations for institutional development. The Director, National Museum of Health and Medicine, is a member of the AFIP Executive Committee and an Associate Director of the AFIP.

ORGANIZATION

The Museum is organized into 3 divisions:

- Office of the Director
- Public Programs and Exhibitions
- Collections and Research

OFFICE OF THE DIRECTOR

STAFF

- Adrienne Noe, PhD, Director
- (A) Donna R. White, Administrator
- (D) Suzanne M. Silver, LtCol, USAF, MSC, Administrator
- (A) Luana Bossolo, Public Affairs
- Theresa Garrard-Strong, Director's Assistant
- Robert Goler, BA, MS, Special Projects
- Cynthia Muldrow, Administrative Support Assistant

The Office of the Director has represented the NMHM within the Institute at numerous regular and special meetings, most notably by participating as a full member of the Executive Committee, in the Institute's strategic planning process, and as a leader in the continued development of multiple projects. In addition, extensive work toward revitalization and promotion of Museum programs has been continued with professional medical, veterinary, and other groups, and such organizations as the Krasnow Institute for Advanced Studies, the National Institutes of Health, the National Science Foundation, the Howard Hughes Medical Institute, the Smithsonian Institution, and the Uniformed Services University of the Health Sciences.

As part of a continued effort to increase the effectiveness of the Museum's budget and staff efforts, the staff has accelerated its participation in collaborative projects with other universities, museums, and federal agencies. Activities include joint programming, collection collaborations, and shared exhibition development or installation. During 1999, work continued on several extramurally funded research projects and was begun on another. Additionally, a strategic planning initiative was begun with museum planners Harold Skramstad and Susan Skramstad.

Other active projects involve historical investigations on the public perception of the Museum as a

public entity. Elements of this project continue to examine the Museum's public and professional dimensions, the inclusion of the Museum in Institute operations, and general Museum/Institute interactions. An extensive project to provide information on medical museum holdings nationwide is underway. Project staff are surveying military collections in medical museums and medical collections in military museums for exhibitions and planning purposes.

Service to the Armed Forces Institute of Pathology by staff of this office includes membership in the Information Guidance Council, the Scientific Computing Group, the Master Planning Group, the Resources Management Committee, the Strategic Planning Committee, the Facilities Committee, the Research Committee, the Registrars Forum, the Tissue Utilization Committee, and the Office of Continued Medical Education.

Additionally, staff participated outside the Institute with numerous organizations, including the following groups: The Society of Medical Consultants to the Armed Forces, The Duke University Medical School Center for In-vivo Microscopy, The Aerospace Medical Association, The American Association for the History of Medicine, The Washington Society for the History of Medicine, The Association of Science and Technology Centers, the George Mason University, National Health Sciences Consortium (as vice president and a member of its board of directors and a representative of the consortium's only Washington, DC site). We also continued projects with the Congenital Heart Research Center at the Oregon Health Sciences University in Portland, the University of Illinois at Champaign-Urbana Biomedical Research Laboratory, and the Natural History Museum in London. Fifty-seven informal and formal lectures regarding the Museum and its mission were given.

Other professional services include continued executive roles with numerous medical and scientific groups and principal investigator roles with the National Science Foundation and National Institutes of Health funded activities. Other extramural organizations that supported projects include the American Registry of Pathology, Soka-Gakkai, International, the University of Oregon, and the Museum for African Art of the Smithsonian Institution.

PUBLIC AFFAIRS

During 1999, the Museum's Public Affairs Office continued marketing efforts and strengthened relationships within the business, museum, and tourism communities to increase awareness of the Museum throughout the Washington DC metropolitan area, and among tourism and military audiences.

The Museum cultivated ties with several area grassroots and cultural-based organizations to better position itself as a significant historical, community, and cultural attraction.

The Museum remained an active member of the DC Heritage Tourism Coalition, a consortium of over 80 cultural and community organizations in Washington, DC with a common goal to strengthen the image and the economy of the District of Columbia by engaging visitors in the diverse heritage of the city beyond the National Mall and monuments. Through the DC Heritage Tourism Coalition, the Museum received prominent recognition in *Capital Assets*, a publication providing an inventory of all DC cultural attractions by neighborhood and theme. The publication was presented to federal and city government leaders in June 1999. The Museum benefits from other efforts organized through the DC Heritage Tourism Coalition, such as collaborative marketing materials, a joint product-licensing program, and a neighborhood heritage trail tour along the Georgia Avenue corridor.

The Museum also fostered ties with the DC Convention and Visitors Association, the District of Columbia Chamber of Commerce, and the Historical Society of Washington, DC. Through collaboration efforts spearheaded by the Historical Society, the Museum was 1 of 20 "off-the-Mall" cultural organizations participating in Growing Up In Washington, a project that commemorates the millennium as well as Washington's bicentennial. In addition, the Museum helped the Historical Society of Washington decorate the DC Tree of the Pageant for Peace. The Museum's tree ornaments depicted images from the Visible Human Project, such as the hologram and 3-D interactive as well as Museum photographs spanning the last 140 years. The DC Tree is 1 of the 52 trees surrounding the national Christmas tree located on the Ellipse across from the south lawn of the White House.

The Museum remained a designated site on the Civil War Discovery Trail, which was named 1 of 16 National Millennium Trails in the United States by the White House. As a result, the Museum received recognition in marketing and promotional materials produced by the Civil War Trust at no cost.

Marketing

The Museum continued brochure distribution to public kiosks located throughout the Washington, DC metropolitan area, including 240 hotels and the Capital Hill offices of the US House of Representatives and the US Senate. In addition, brochures were inserted in welcome packets distributed to attendees at a variety of conferences held at the Washington, DC Convention Center.

Working closely with the Museum's Public Programming Department, Public Affairs placed an emphasis

on promoting programs and workshops to the local community to raise awareness of the Museum's educational offerings and to increase program attendance.

A combined number of more than 240 print advertisements for the Museum and its exhibits and programs appeared in the *Washington Post* (daily circulation: 782,779; Sundays 1,095,091), the *Washington Times* (daily circulation: 101,519), *City Paper* (weekly circulation: 98,000), the *Baltimore Sun* (weekday circulation: 327,102; Sundays 473,666), *Washington Flyer Magazine* (bimonthly circulation: 180,000), and *Where Washington Magazine* (monthly circulation: 93,500). As a division of the AFIP, the Museum also reached the local military community through publication of print advertisements in the 10 major military papers supporting the government installations within the National Capital region: *Pentagram* (weekly circulation: 27,000); *The Beam* (weekly circulation: 15,000); *National Naval Medical Center Journal* (weekly circulation: 10,000); *Henderson Hall News* (weekly circulation: 5,500); *Capital Flyer* (weekly circulation: 15,500); *Sea Services Weekly* (weekly circulation: 10,000); *Stripe* (weekly circulation: 10,000); *Standard* (weekly circulation: 6,000); *Trident* (weekly circulation: 11,000); *Tester* (weekly circulation: 16,500). In addition, advertisements were published in two separate supplements, *Welcome to DC* (April 16) and *A Day with DOD* (July 15), inserted into the 10 Washington, DC area military papers, reaching a combined circulation of more than 100,000.

In May 1999, the Museum began electronic advertising with WGMS-FM 103.5, one of the longest standing radio stations in the Washington, DC area, reaching a targeted audience of ages 35 to 54. The station ran between 15 and 20 ten-second commercial spots per month during morning and afternoon drive-time hours from May through December, reaching 190,000 listeners.

The Museum also ran existing *Yellow Pages* advertising with a color photo, 75 words of text, and a 60-second recorded message in the *Info Scene* directory.

Media Coverage

In 1999, the Public Affairs Office implemented PR Newswire, a national wire service capable of disseminating Museum press releases and media advisories to over 1,000 print and electronic press newsrooms across the United States. PR Newswire enhanced the Public Affairs Office communications abilities by increasing the speed of delivering information to an expanded press core. Public Affairs also implemented Media Map, a press database including contact and profile information on several thousand US print and electronic reporters and editors. To help track print coverage, the Museum continued to use Bacon's news clipping service.

The Museum received media coverage in local, national, and international publications as well as coverage in TV and radio outlets. Several major highlights include a cover feature in the *Washington Post's* "Health" section (March '2) on the exhibit "To Cure and Protect: Sickness and Health in African Art"; a *Washington Times* article (June) on the Museum's Civil War exhibit and related summer programs; a WTTG-TV *Fox News* live broadcast from the Museum, including interviews with Dr. Adrienne Noe and curator Paul Sledzik on the Museum, exhibits, and Vampires and Mummies Halloween Program; a *New York Times* article on collections featuring a Museum artifact and a quote from Dr. Noe.

Additional media coverage included the following: (February 1999) *Stripe* Newspaper, "To Cure and Protect: Sickness and Health in African Art"; AOL Web site, African Art; *The Lancet*, Civil War Exhibit; *Where Magazine*, Fine the Cure HIV; (March) *City Paper*, African Art; *The Lancet*, African Art; *New England Booming Magazine*, Museum mention in travel article; *Publishers' Auxiliary Magazine*, Museum mention in travel article; (April) *Stars & Stripes*, Museum feature with photographs; (May) *Museums Washington Magazine*, highlight on African Art and Civil War exhibits; WTTG-TV *Fox News*, Museum highlighted in feature story on Brentwood DC neighborhood; *Baltimore Sun*, Museum listed in article on "Ten Best Places To Visit in DC"; (June) *Pentagram*, article on Research Matters case exhibit, Identifying the Vietnam Unknown; *Stripe*, article on Identifying the Vietnam Unknown; (July) *Where Magazine*, highlights on Civil War and African Art exhibits; WPFW 89.3 FM *Pacifica Radio*, live Interview with Dr. Noe on African Art exhibit; *Code Magazine*, article on African Art exhibit; *Washington Post*, article in the Federal Column on Vietnam Unknown exhibit; (September) *New Jersey Courier-Post*, Merck Manual, quote from Dr. Noe; *Roll Call*, "Health Care & Medicare" special section, published images of Museum hologram and microscope; (October) *Museums Washington*, highlights on Vietnam Unknown, Linus Pauling, Human Body/ Human Being exhibits, included photograph of hologram; *Pentagram*, feature story on Museum; *Washington Parent Paper*, article on Linus Pauling Exhibit; *City Paper*, article promoting Vampire and Mummies Lecture; WPFW 89.3 FM, live interview with Dr. Noe on Linus Pauling exhibit; *Time for Kids*, feature on Museum curator Paul Sledzik; (November) *City Paper*, article promoting Paul Sledzik's Civil War lecture at the Lyceum Museum, Alexandria, Va; (December) *Stripe*, article on Fred Sanger granted a Museum visit through the Make-A-Wish Foundation; *Fox News*, St. Louis, Mo, Make-A-Wish Foundation, Fred Sanger visit.

The Museum and staff were also featured in a number of documentaries airing on the Discovery

Channel, the History Channel, and German television.

The World Wide Web Site

The Museum Public Affairs Office was principally involved in expanding content on the Museum Web site to include information reflecting ongoing exhibits and programs such as "To Cure and Protect: Sickness and Health in African Art" and "Identifying the Vietnam Unknown." In addition, the Museum contracted with a Web master to handle daily maintenance. The Museum was also added to other museum and tourism Web sites, such as the Maryland Science Center Discover Science site, Microsoft's washington.sidewalk.com, washingtonpost.com, and washingtonian.com.

DIVISION OF PUBLIC PROGRAMS AND EXHIBITIONS

MISSION/ORGANIZATION

The division directs and coordinates operational and interpretive components of the Museum. This includes administration, exhibitions, public programs, educational tours, facilities use, and related activities. Division staff work with governmental agencies, professional associations, museums, and individuals to develop interpretive strategies that promote greater public awareness of contemporary and historical perspectives on disease, public health, and health education.

STAFF

- Lisa Berndt, MFA, Exhibit Department Head
- Sarah Carey, BFA, Exhibits Specialist
- (A) Jeffrey Mitchell, MA, Visual Information Specialist
- (A) Maureen Malloy, MA, Public Programs Coordinator
- (D) Katherine Epler, MAT, Visitor Services Manager
- Jeanne Levin, BS, Tour Program Manager
- (A) Belinda Guest, Visitor Services Representative
- Nicole Gunter-Thomas, Visitor Services Representative
- Veda Taylor, Visitor Services Representative
- Maurice Young, Visitor Services Representative

DOCENTS

Dr. Sal Battiata, Dr. Ed Beeman, Catherine Bonomo, Dr. Merlin Brubaker, Edward Byrde, James DePersis, Margaret Garner, Dr. Jason Geiger, Dr. Ira Green, Regina Hunt, Albert Jacobs, Carol Jorgensen, LaVerne Madancy, Kay McMahon, Dr. Richard Mulvaney, Sol Pargament, Colleen Pettis, Anne Pollin, Dr. Edward Rea, Enid Rosen, Dr. George Sharpe, Dr. Stephen Schiaffino, Mary Wilburn, Caroline Whittenberg, and (D) Rose Zimmerman

EXHIBITIONS

The "Research Matters" exhibit program provides Museum visitors with a window into AFIP research activities. Piloted in 1996, the program occupies an exhibit case in the Human Body/Human Being exhibit gallery.

Research Matters: Naming the Vietnam Unknown: Michael Joseph Blassie Comes Home
May 27, 1999- spring 2000.

This exhibit explains the science of Mt-DNA testing and describes the role of the AFIP in settling the question of the identity of the soldier buried in the Vietnam Tomb of the Unknown. The exhibit includes items that were recovered with Blassie at his crash site in South Vietnam. Dr. Mitchell Holland, chief, AFDIL/OAFME provided content guidance during exhibit planning, which initiated in March of 1998. The Blassie family provided the loaned items.

Temporary Exhibit Program

The Museum's 1,430-sq ft Silliphant Hall is dedicated to temporary installations. Exhibit programming for this space continues to be used to meet one of the Museum's exhibition missions of exploring the links between the humanities and the world of medicine. Museum staff installed two exhibits in Silliphant Hall during 1999.

To Cure and Protect: Sickness and Health in African Art
February 18 – August 23 1999

The Museum collaborated with the Museum for African Art, New York, New York, to display 103 artifacts documenting traditional healing practices in sub-Saharan Africa. The exhibit was divided into four areas: Leadership, Spirits, and the Safeguarding of Health; Divination, Diviners, Healing, Healers; Protecting the Individual, the Family, and the Community; and Representing Disease: Causes and Cautions in Art. This major effort was initiated in spring of 1998. Frank Herreman, curator of exhibitions at the Museum for African Art curated the show and provided significant assistance to its realization.

Linus Pauling and the Twentieth Century: Quest for Humanity
October 20, 1999—June 8, 2000

The Museum hosted this travelling show, assembled by the following sponsors: Oregon State University, the Linus Pauling family, and Soka Gakkai International. The exhibit highlights the life and times of two-time Nobel Prize Laureate, Linus Pauling, known for his landmark research on orthomolecular medicine, nutrition, and health as well as his efforts as a peace activist. Through the use of videos, interactive displays, and photos, this exhibit describes the important role scientists can play in not only helping us to better understand the physical world around us, but also the role they can play in humanitarian efforts. This exhibit extended beyond Silliphant Hall into the adjacent gallery and the Museum Lobby.

National History Day Program
June 16—October 11, 1998

Mini-Gallery, Brinton Hall

The Museum displayed six medically themed tabletop exhibits created by student finalists in the 1998 National History Day competition. The Museum partnered with National History Day staff to provide this opportunity for students to display their work once the annual competition concluded at the University of Maryland. This collaboration is in its second year. The students who were selected to display their projects at the Museum were invited for a behind-the-scenes tour and meeting with the Museum's staff.

Out of the Blue Cabinets: Staff Selections
October 15, 1999—May 21, 2000

Mini-Gallery, Brinton Hall

Members of the Museum staff selected objects from the collections that held special meaning for them and wrote labels describing the significance of the objects. These were displayed together along with information describing the general collection mission of the Museum.

Growing Up in Washington Exhibit
September 10, 1999 – indefinite

This exhibit, comprised of photos of visitors to the Museum for the past 140 years. It is a part of a citywide initiative that explores the experiences people have had growing up in the neighborhoods of Washington, DC.

Redesign of Human Body/ Human Being exhibit entryway
May 27—indefinite

The redesign of the HB/HB exhibit entryway involved incorporation of a 3' x 4' hologram of the Visible Human electronic cadaver created and donated by artist/researcher Alexander Tsiras. A computer interactive allowing individual exploration of the visible human data set was also installed.

Exhibit Design Master Plan: Germs of War

On behalf of the NMHM, during the spring of 1999, the American Registry of Pathology contracted with the exhibit design and development firm Douglas/Gallagher to engage in conceptual development of an exhibit about the use of infectious diseases as biological warfare agents. The exhibit is designed to disseminate knowledge, gained through scientific research, about infectious diseases, and will highlight the role that medical researchers, particularly military medical researchers, have played throughout history to advance knowledge about infectious diseases and their continued efforts to monitor and study them. The outcome of this initial effort, funded through the American Registry of Pathology, is a 50-page exhibit proposal and a tabletop display. Both are intended to be used as fundraising tools for this exhibit effort.

PRESENTATIONS

November 8, 1999: Williamsburg, Va, Human Remains: Conservation, Retrieval and Analysis, "When your insides are out: Museum visitor perceptions of displays of human anatomy," L Barbian, L Berndt.

PUBLICATIONS

Abstracts

1. Barbian L, Berndt L. When your insides are out: Museum visitor perceptions of displays of human anatomy. In: *Human Remains: Conservation, Retrieval and Analysis*; November 7-10, 1999; Williamsburg, Va.

PUBLIC PROGRAMS

The Public Programs Department offered a variety of new programs at the Museum in 1999, serving a wide range of visitors.

VISITOR SERVICES

Attendance

Overall attendance at the Museum and its programs in 1998 was 75,954, including those present at special events. In addition to regular and special exhibitions, special event examples include programs by the Museum for public audiences, receptions for organizations with missions related to those of the Museum, meetings or courses offered by other divisions of the AFIP, and meetings or training sessions. Other special audiences include students in classrooms served by NMHM staff, audiences at programs the NMHM staff and volunteers had made significant proportions of presentations, and other public and professional venues.

Overall attendance increased significantly over last year. The number of tours given increased by 13.8%, with the number of visitors participating in scheduled tours increasing by 15.4%. Special event attendance increased by 18.7% over 1998.

PROGRAMS

A variety of Museum programs were offered in conjunction with the exhibition "To Cure and Protect: Sickness and Health in African Art," including 2 parent-child workshops on the use of herbs presented by Habeebah Muhammad from the Smithsonian Institution Anacostia Museum; 2 performances for the general public by African dance troupe Tony Powell and the All Natural Dancers and Drummers; and a series of three interactive children's programs offered in June, July, and August that featured traditional African storytelling by Carmen Lattimore, of Nancy Seis Presents, and musical demonstrations and activities by musician and performer Tony Powell. Warren Robbins, founding director emeritus of the National Museum of African Art, gave an illustrated lecture on "Picasso's World and the Art of Africa." In addition, Museum hours were extended on the first Wednesdays of May, June, July, and August, until 8 p.m. for tours and a film series featuring films on traditional and modern medicine in Africa.

A series of three programs on the Civil War were offered for children and the general public in the summer of 1999. The programs featured a living history interpretation by actress Mary Ann Jung on the life of nurse Clara Barton, founder of the American Red Cross, and "A Day in the Life of a Civil War Soldier" by interpreter George Wunderlich of the History Center.

Other Museum programs included an illustrated lecture by Dr. Michael Ackerman of the National Library of Medicine on the Visible Human project in September, followed by a popular Halloween program that featured the Museum's curator of Anatomical Collections, Paul Sledzik, discussing "Vampires: Truth or Fiction?" and Allison Wilcox on "Mummies Unwrapped." The program included a "Forensics Mystery" for kids—a hands-on activity in which participants use skeletal remains to identify a missing person.

Gina Kolata, science writer for the *New York Times*, spoke at the Museum in November, and read from her new book *Flu! The Story of the Great Influenza Pandemic of 1918 and the Search for the Virus that Caused It*. Ms Kolata discussed the role of the important research done at AFIP in learning more about the virus that caused the pandemic.

A Museum lecture by Dr. Sarah Frankel of the US military HIV Research Program, held on World Aids Day, December 1, discussed the search for an AIDS vaccine.

Programs offered in conjunction with the exhibition "Linus Pauling and the Twentieth Century: Quest for Humanity" included The Chemistry of Peace, an all-day film festival with speakers and discussants exploring case studies of creative conflict resolution in a variety of international situations. A "Kids' Science Day" in December offered children and families a chance to explore chemistry through a variety of fun, hands-on science activities.

OTHER EVENTS

In addition to Museum-sponsored events and programs, the Museum hosted 22 events for the AFIP and WRAMC. The Museum also had the opportunity to host events and receptions for such distinguished organizations as the Washington Society for the History of Medicine, the DC Science Writers Association, Georgetown Medical Center, and Pfizer, Inc, among others.

Teacher Training

Montgomery County Public Schools participated in 4 teacher-training sessions on comparative anatomy, microscopy, and human physiology taught by Museum staff and docents.

Ongoing Programs

The Museum offered weekend public tours to walk-in visitors on the second and fourth Saturday of each month. In addition, the Discovery Carts continued to be popular with Museum visitors and were staffed most weekends and holidays.

Tour Program

Recruitment of new Museum docents took place throughout the fall of 1999. It is anticipated that the training program for new docents will be held in the spring of 2000. Current docents benefited from monthly training sessions as part of their continuing education.

In addition to the General tour, which introduces visitors to the highlights of the exhibition galleries, the following Curriculum Connection tours were offered during 1999: The Human Body, Turning Points: The Nature of Medicine, and Progress Against Disease. Increased interest in the hands-on Museum activity Forensics Mystery was noted, as it proved popular as a summer camp enrichment activity.

In 1999, the Museum initiated a unique partnership with the Smithsonian Institution National Museum of African Art, through which Smithsonian docents were trained to lead tours of the exhibit "To Cure and Protect: Sickness and Health in African Art." A total of 7 docents participated in the training sessions and led tours at the Museum.

In another partnership, the Museum collaborated with Soka Gakkai International (SGI), a sponsor of the exhibition "Linus Pauling and the Twentieth Century: Quest for Humanity," to train members as docents to conduct tours of the exhibit while it is at the Museum.

PROFESSIONAL ACTIVITIES

Maureen Malloy served as the chairperson of the Council for Maryland Archaeology Education Committee.

PRESENTATIONS

1. March 27, 1999: Chicago, Ill. Society of American Archaeology Annual Conference, "Teaching and learning from teachers: a case study in public archaeology and education," M Malloy, K Uunila.

PUBLICATIONS

1. Kaupp PA, Malloy M, Wilson C, Burnett F, compilers. A Critical Bibliography on North American Indians for K-12. Anthropology Outreach Office, Smithsonian Institution; 1999. <http://www.si.edu/anthro/Indbibl/bibliog.html>.
2. Malloy M. *Maryland with Pride*. Lesson 12: Ancient treasures in your backyard: a story about archaeology. An Internet curriculum and teacher's guide for 4th grade students studying Maryland. 1999. <http://www.intandem.com/NewPrideSite/MD/lesson12>.

DIVISION OF COLLECTIONS AND RESEARCH

ANATOMICAL AND HISTORICAL COLLECTIONS; OTIS HISTORICAL ARCHIVES

MISSION

The Collections Division of the NMHM preserves materials representing the broad subject areas related to the history and practice of American medicine, military medicine, and modern medical and health issues and research. Each collecting division specializes in different media and subject areas. The division's

responsibilities are to (1) provide the highest level of professional care for the NMHM collections and their associated documentation; (2) collect objects, specimens, and related archival materials deemed significant and relevant to the mission of the NMHM; and (3) support research, exhibits, and public programs through access to collections.

STAFF

Lenore Barbian, PhD, Collections Manager
 Alan Hawk, BA, Collections Manager
 Heather Lindsay, Assistant Archivist
 Marcy Leverenz, Volunteer
 Donna Scorzelli Quist, BA, Assistant Collections Manager
 Michael Rhode, Chief Archivist
 Paul S. Sledzik, MS, Curator
 Christina Sweet, MS, Conservator
 Wendy Turman, MA, Registrar
 Interns: Diane Bodeen, Jasmin Valentin
 Volunteers: Alex George, Markus Ring

CURATION AND COLLECTIONS MANAGEMENT

The Collections Division is responsible for the curation and management of the Museum's collections. These responsibilities encompass management of existing collections, the acquisition of new objects and collections as directed by the collecting plan, registration of collections and objects, conservation of objects and collections, maintaining information about the collections, space management, and loans (both incoming and outgoing) of objects.

The Collections Committee is comprised of all staff members of the division and the staff of the Otis Historical Archives. The committee dealt with issues of curation and collections management in biweekly meetings. The committee worked on a variety of issues, including implementation of a new accession/deaccession policy and examining a common database for collections information.

Anatomical Collections: Several collections were rehoused and their computerized databases verified and updated. An item-level shelf inventory of the human gross pathology collection was completed, resulting in a computerized database and a conservation assessment of each specimen. All federally recognized tribal entities and Native Americans organizations for which the Museum holds culturally affiliated human remains were contacted and informed of the Museum's holdings, as required by Public Law 101-601, the Native American Graves Protection and Repatriation Act. Three formal repatriation claims were received in response to our consultation efforts.

Historical Collections: Computerized inventory of artifacts stored in Hammond Hall, the microscope storage area, the warehouse, and the exhibit halls now includes 15,838 artifacts, approximately 98% of Historical Collections. The artifacts included are listed by catalog number, accession number, classification based on Medical Subject Headings, object name, and location. The Historical Collections Computer Catalog, which differs from the inventory by containing a more detailed description of the artifact, now includes 10,248 artifacts, approximately 64% of the collection. The 338 items cataloged in 1999 include new accessions, previously accessioned artifacts, and artifacts going out on loan.

OFF-SITE STORAGE FACILITY

During the past year, the Museum made significant progress in addressing collection management needs at its off-site storage facility in Gaithersburg, Md. Several collections were moved onto the mezzanine shelving unit. A contract was let for storage crates of several historical objects currently in open storage.

ACQUISITIONS

The collecting divisions (Anatomical Collections, Historical Collections, and the Otis Historical Archives) processed 40 accessions during the past year. The acquisition of these unique artifacts, specimens, and archival material expanded the Museum's holdings by several hundred items.

Individuals who donated materials to the Museum include: Mark Anthony; Blair Rogers; Dr. Bruce Smith Constance Evrad; Glenn N. Wagner, CAPT, MC, USN; Dr. and Mrs. Till Bergemann; Gordon Letterman, MD; Dr. S. Stephen Schiaffino; Harrison F. Harbach, MD; Patience C. Stom; Shirley Stroud; Art Rhode; Peter Sellers; Reed Russell; Ana Darden; Doug McPherson; Estate of Alberta Schmid; William H. Spencer, MD; Dr. Diane France.

Organizations that donated or transferred material to the Museum include Department of Membrane Biochemistry, WRAIR; Wisconsin Veterans Museum; US Supreme Court; Children's Hospital of Philadelphia; Department of Orthopedic Pathology, AFIP; Louisiana Army Reserve National Guard; Charles Loui:

Davis Foundation; Defense Supply Agency, Ft. Meade; Division MCR, WRAIR; National Museum of American History; Premiere Video; Department of Medical Education, WRAMC; Health Care Financing Administration; and Department of Veterinary Pathology, AFIP.

Historical Collections: The moving of Walter Reed Army Institute of Research (WRAIR) to the Forest Glen Annex provided for the collection artifacts documenting the biomedical research conducted at WRAIR. These items include two small cabinets of hand-blown glass pipettes and other glassware used by Colonel Carl Alving in his research complement-dependent damage to liposomes by the glucose release method. This research has resulted in the development of liposome vaccines such as those for hepatitis and malaria. Another acquisition was hand-blown glassware and research devices developed and constructed by the instrumentation shop in support of the biomedical research at WRAIR. Among the devices collected is an early model ELISA device constructed at WRAIR in the early 1970s.

Acquisition of surplus military medical equipment advertised over the Internet by DoD continues, expanding our collection of Vietnam War era medical equipment. Historical Collections acquired a field surgical light set, circa 1971, and a field x-ray machine.

The Museum received a R & J Beck binocular microscope, belonging to John Woolston Coles, US Navy Medical Officer, 1863 to 1885, who was the director of the Naval Hospital at Yokahama, Japan from 1875 to 1879.

CONSERVATION

A contract for conservation of a tattooed torso from the Anatomical Collections continued. Contract conservation services were also acquired to evaluate a historical object for possible loan, and for review and mount recommendations for the temporary exhibition "Out of the Blue Cabinets." Work continued on the lab space dedicated to the Museum conservation laboratory within the AFIP. The departure of Christina Sweet, the Museum conservator, initiated a search for a new conservator.

LOANS

Eleven loans were made from the National Museum of Health and Medicine in 1999. The loans included 13 anatomical specimens and 26 historical artifacts. Institutions that borrowed from the Museum include National Library of Medicine; Gerald R. Ford Museum; Pamplin Park Museum of the Civil War Soldier; and Howard Hughes Medical Institute for the 1999 Holiday Lectures on Science; Smithsonian Libraries; National Portrait Gallery; Department of Orthopedic Pathology, AFIP; Catholic University; and Directorate of Medical Administration and Operations, WRAMC.

EXHIBITION SUPPORT

Division staff provided script and label copy, research support, loan processing, object examination, objects installation and deinstallation, and light-level surveys of several in-house exhibits and temporary exhibitions. These included "To Cure and Protect: Sickness and Health in African Art" and "Naming the Vietnam Unknown: Michael Blassie Comes Home" (Lenore Barbian). The entire collections staff was involved with a temporary exhibit, "Out of the Blue Cabinets," featuring staff selections from the collections. Collections staff also worked with the exhibits department to develop and install new mounts for "From Lancets to Leeches" exhibit case and the stethoscopes exhibit case.

In addition, work was also began on several exhibits scheduled to open in 2000, including the revision of "Living in a World with AIDS" (Lenore Barbian) and the next "Research Matters" exhibit (Paul Sledzik).

RESEARCH REQUESTS

Anatomical Collections: The Anatomical Collections received 70 written, e-mail, and telephone inquiries, including information requested from researchers at Cable Natural History Museum; Chicago Museum of Science and Industry; Cincinnati Museum Center; Knoxville Civil War Roundtable; Museum and Collector Resource; National Museum of Natural History; Northeastern University; Northern Illinois University; Office of the State Archaeologist, Iowa; University of Alberta, Canada; University of Montana; Lehrstuhl fuer Mikrobiologie, Wuerzburg, Germany; Henninger Productions, Arlington, Virginia; Vector-borne and Zoonotic Diseases Program, Arizona Department of Public Health; University of Tennessee, Memphis; and the General Hiram G. Berry Civil War Roundtable, Rockland, Maine. Lenore Barbian was interviewed by Granite Film and Television Productions Limited (England) for a segment on General Dan Sickles.

Historical Collections: The Historical Collections received 82 requests for information. Among these were 6 from military sources, 7 from other federal agencies, 69 from civilian sources, and 1 interdepartmental request. Consultation to museum and history professionals: Buffalo and Erie County Historical Society; The Buffalo Seminary; Judy Chelnick, National Museum of American History, Smithsonian Institution; Douglas Dammann, National Museum of Civil War Medicine; James Edmondson, Dittrick Museum of

Medical History; Howard Hughes Medical Institute; Lewis and Clark National Historic Trail; Peter D'Onofrio, Society of Civil War Surgeons, Inc; Deborah Warner, National Museum of American History, Smithsonian Institution; and Worcester Art Museum.

PROFESSIONAL ACTIVITIES

In addition to responsibilities involving curation and collections management, division staff supported AFIP activities and participated in educational activities, professional meetings, public lectures, and scientific research.

Anatomical Collections: Lenore Barbian and Paul Sledzik continued to provide a range of services to the AFIP, professional organizations, and school groups, including the Northern Virginia Summer Academy, the Fairfax (Virginia) Medical Society, the National Youth Leadership Council, and the Columbia Green Community College. Paul Sledzik and Lenore Barbian organized the twelfth annual Forensic Anthropology Course that was held at USUHS. The course was attended by 48 students. They also provided support to an ongoing program with Montgomery (Maryland) County Schools for elementary school teachers' training by offering several lectures on skeletal biology and forensic anthropology. They also presented lectures at various DC-area high schools. Lenore Barbian coordinated the contract "The Use of Human Remains in Museum Exhibits," which explored Museum visitors' perceptions of displays of human anatomy through focus groups and on-site visitor interviews. Paul Sledzik continued his appointment as team commander for the Region III Disaster Mortuary Operational Response Team (DMORT), a division of the USPHS/DHSS. The team encompasses DC, Delaware, Maryland, Pennsylvania, Virginia, and West Virginia. Under DMORT, he responded to a cemetery flood in Tarboro, North Carolina, following Hurricane Floyd. He was also predeployed for the 1999 State of the Union Address and the NATO 50th anniversary meetings in Washington. He also provided laboratory support for AFIP Forensic Dentistry Course and the Advanced Forensic Practicum.

Deployments:

1. January 28, 1999, Washington, DC. DMORT predeployment for State of the Union address, PS Sledzik.
2. April 21-25, 1999, Washington, DC. DMORT predeployment for NATO 50th anniversary, PS Sledzik.
3. September 23-27, 1999, Tarboro, NC. DMORT response to cemetery flood, PS Sledzik.

Historical Collections: Artifacts related to the assassination of James Garfield were featured in a segment about "Alexander Graham Bell's Metal Detector" in the History Channel's TV series *History Lost and Found*. Alan Hawk, Historical Collections manager, appeared in the segment to discuss the case of James Garfield. Alan Hawk completed his term as president of the Medical Museums Association on June 1999. The division conducted research on World War II medical treatment facilities for the Office of Counsel, US Army Corps of Engineers, Sacramento District, for superfund cases: *State of California v US Army and City of San Bernadino v United States*.

PRESENTATIONS

1. February 2, 1999: Allentown, Pa, Civil War Roundtable of Eastern Pennsylvania, "Bones, bodies, and bullets: the human skeleton's perspective on the Civil War," P Sledzik.
2. March 7, 1999: Silver Spring, Md, AFIP Forensic Dentistry Course, "Disaster mortuary operational response teams," P Sledzik.
3. March 9, 1999: Washington, DC, Smithsonian Institution Resident Associate Program, "Vampires of New England," P Sledzik.
4. March 12, 1999: WRAMC, Grand Rounds, Department of Medicine, "An ambulating hospital: the hospital trains of the US Army during the Civil War," A Hawk.
5. National Museum of Health and Medicine March 27, 1999: NMHM/AFIP, Biological Communications Association monthly meeting, "The Billings Microscope Collection and biological imaging," A Hawk.
6. May 7, 1999: Brunswick, NJ, American Association for the History of Medicine, 72nd Annual Meeting, American Association for the History of Medicine, "The common foe, the US Army Medical Department and the Imperial Japanese Army against malaria, 1941-1945," A Hawk.
7. August 6, 1999: Frederick, Md, Civil War Medicine Seventh Annual Conference, National Museum of Civil War Medicine, "An ambulating hospital: the hospital trains of the US Army during the Civil War," A Hawk.
8. September 27, 1999: WRAMC, Intern Class Meeting, "An ambulating hospital: the hospital trains of the US Army during the Civil War," A Hawk.
9. October 16, 1999: NMHM/AFIP, "Vampires: the truth behind the legend," P Sledzik.

10. October 30, 1999: Washington, DC, Smithsonian Institution Resident Associate Program, "Vampires: the truth behind the legend," P Sledzik.
11. November 8, 1999: Williamsburg, Va, *Human Remains: Conservation, Retrieval and Analysis*, "When your insides are out: Museum visitor perceptions of displays of human anatomy," L Barbian, L Berndt.
12. November 8, 1999: Williamsburg, Va, *Human Remains: Conservation, Retrieval and Analysis*, "From privates to presidents: past and present memoirs from the Anatomical Collections of the National Museum of Health and Medicine," P Sledzik, L Barbian.
13. November 16, 1999: Honolulu, Hawaii, *Advances in Personal Identification in Mass Disasters*, sponsored by the US Army Central Identification Laboratory and the Smithsonian Institution, "Forensic science, disaster response, and governmental policy," P Sledzik, F Ciaccio.
14. December 8, 1999: The Lyceum, Alexandria, Va, "Bones, bodies, and bullets: the human skeleton's perspective on the Civil War," P Sledzik.
15. December 15, 1999: WRAMC, Intern Class Meeting, "Do our best for the wounded: the Medical Department of the National Liberation Front," A Hawk.

PUBLICATIONS

Abstracts

1. Barbian L, Berndt L. When your insides are out: Museum visitor perceptions of displays of human anatomy. In: *Human Remains: Conservation, Retrieval and Analysis*; November 7-10, 1999; Williamsburg, Va.
2. Sledzik P, Barbian L. From privates to presidents: past and present memoirs from the Anatomical Collections of the National Museum of Health and Medicine. In: *Human Remains: Conservation, Retrieval and Analysis*; November 7-10, 1999; Williamsburg, Va.

Other Publications

1. Hawk A. Review of Thomas G. Weiss, military-civilian interactions: intervening in humanitarian crisis, H-War, H-Net Reviews, August 1999.

OTIS HISTORICAL ARCHIVES

RESEARCH REQUESTS

The archives received approximately 200 requests for information this year, not including Medical Museum and AFIP requests, visitors, or referrals to other institutions.

Researchers were affiliated with AFIP and WRAMC, including the Director's Office; Pulmonary Pathology; Legal Council; Department of Neuropathology; WRAMC Head Trauma Department; and WRAIR. External users included A&E Television Networks; Arizona Department of Health Services; *Baltimore Sun*; Borden Center; Centro de Investigacion y Estudios; Circon ACMI; Day, Berry & Howard; Dickstein, Shapiro, Morin & Oshinks; DOD Inspector General; East Tennessee State University; FBI; F. F. Russell's great grandson; Ford's Theatre National Historic Site; *Health Week*; Henninger Productions; Henry Holt and Company; Jones, Day, Reavis & Pogue; Lewis Group; Manchester College; McCarthy Communications, Inc; MCP Hannehmann Division of Medical Education; Middlebury College Art Department; Museum of the Rockies, Montana State University; NMRC; National Geographic Society; National Library of Medicine; National Park Service; National Portrait Gallery; *Newsday*; *New Yorker Magazine*; *New York Times Magazine*; Pamplin Historical Park; Pan-American Health Organization; Pinball Productions, Discovery Channel; Plague Productions (ABC TV); Roy McDonald Productions; Second Story Books Appraisal; Smithsonian-American History; South Carolina Department of Health Acute EPI-Division; Southerland Media Productions; Steptoe & Johnson; Sunnia Communications; US Marine Corps; University of Pennsylvania; University of Texas Health Sciences Center; Video Press; US Navy; Wilson and Associates; Working Dog Productions; 6th Floor Museum.

Support was provided to OAFME's project on wound pattern images, which provided photographs enabling the project to continue.

ACQUISITIONS

Major acquisitions included more AFIP records from former director Bruce Smith; Korean War photos from Steve Schaffino; and Museum curator F. F. Russell's papers from his family and Museum records from staff members. Dr. Bruce Williams facilitated the collection of Dr. Charles Barron's veterinary pathology reprint collection. Dr. William Inskeep transferred the records of the now-defunct Registry of Comparative Pathology from the Department of Veterinary Pathology. At the end of the year, the Barondes family donated their father's papers relative to his military service in Siberia after World War I and a diary related to his World War II service. Discussions began with WRAIR staff over acquiring their film collection. Many small donations of books, posters, pamphlets, trade literature, and photographs were added to the overall collection. Museum records from staff members were added to the archives.

RESEARCH

Lectures and publications include "Drawing on tragedy," on Museum artist Hermann Faber in *Hogan's Alley*. 1999 (Winter): 6. An article on the World War II Army education campaign, a review of the Edward Sorel exhibit at the National Portrait Gallery, and, with Robert Goler, a book chapter on Civil War veterans have been accepted for publication, but had not yet appeared by the end of the year.

EXHIBIT SUPPORT

The "staff picks" exhibit included pieces from the archives. Rhode chose a painting of Ambroise Pare and his book *De Chirurgie, ende alle de Opera...* from 1649. Lindsay chose Lejaren Hiller photographs. Lindsay worked with the Exhibits Department to find pictures of the Museum for the "Growing Up In DC" exhibit. Rhode assisted retired Brigadier General Anne Mae Hays with her exhibit on President Eisenhower for the VIP suite at WRAMC.

COLLECTIONS MANAGEMENT

Computerized cataloguing on the collection level has continued in the shelf inventory. Initial research into a comprehensive computer catalogue for the entire Museum was begun. Lindsay is still working with Dr. Nelson Irey's papers. Several collections were arranged and described, including the Graham photo collection, Museum PR and exhibit photos, and Civil War medical illustrations. A conservation contract for working on the Reeve negatives was submitted. She also added material to the AFIP Historical Files and updated the finding aid, and completed various smaller processing projects. She and Rhode catalogued additions to the Medical Ephemera, New Contributed Photographs, and General Medical Products Information collections. Lindsay is finishing the preliminary cataloguing of the film collection. Marcy Leverenz catalogued the Reeve Collection's nonpathological photographs from World War I, between #25,000-41,000.

PROJECTS AND OTHER ACTIVITIES

The complete *Guide to the Collections at the National Museum of Health and Medicine* was mounted on the Museum's Web site by Lindsay, expanding the *Web Guide* from just the archives to the entire Museum. A significant archives presence, including the *Guide*, was established on the Web site and continues to bring in researchers. The page of WWI influenza photographs has significantly saved staff time, while ensuring the pictures' wide use. More archival collections were listed in the Library of Congress' National Union Catalogue of Manuscript Collections (NUCMC), ensuring wider researcher use of the collections.

Rhode served during the year on the AFIP's Institutional Review Board (formerly the Human Subjects Committee) and the Library Committee. Rhode continued to serve this year on the Museum's Administrative Committee. Lindsay served on the AFIP's Y2K contingency committee, and as assistant TASO. Rhode and Lindsay were members of the Museum's Collections Committee. Rhode attended the Society of American Archivists convention in Pittsburgh. Lindsay attended the Museums and the Web conference in New Orleans.

PUBLICATIONS

1. Rhode M. Drawing on tragedy. *Hogan's Alley*. 1999;(Winter): 6.

RESEARCH COLLECTIONS

MISSION

To acquire, preserve, and encourage the use of major research collections for all qualified members of the research community. The collections are made available for research and for education by appointment and via Web site. Continued stimulation of new hypothesis-driven research is a top priority.

The Research Collections consist of two divisions: the Human Developmental Anatomy Center and the Neuroanatomy Collections.

STAFF

Archibald J. Fobbs, Jr, Museum Specialist
Elizabeth C. Lockett, Imaging Specialist
William F. Discher, Imaging Technician
Deborah Sweet, Imaging Technician
Nathalie Humblot, PhD, NSF Project Technician

Adjunct Scientists

Dale Huff, MD, Department of Pathology, Magee Women's Hospital, Pittsburgh, Pa
John I. Johnson, PhD, Department of Anatomy, Michigan State University
Wally I. Welker, PhD, Department of Physiology, University of Wisconsin-Madison

Volunteers

Edward Beeman, MD; Stephen Schiaffino, PhD; Benjamin R. Walker, PhD Pharmacology Department, Georgetown University

Student Interns

Ronette Curtis; Tim Geoff; Annalee Seckel Schnebele; Amewusika Sedzro; Ekeria Ekendum; Katerina Dabu; Jain Zhang; Amira Hossain; Dave Brooks; Charlesa Plummer; Dara Langsberg; Philp Bright; Patrick Benjamin; Michael D'Abreu;
Kumudini Mayu

COLLECTIONS

Human Developmental Anatomy Center

Carnegie Institution Human Embryological Collection
Cornell Human and Comparative Embryology Collection
Hooker Humphrey Collection
The Elizabeth Maplesden Ramsey Collection
George Sedgewick Minot Embryological Collection
Gaenssler Pulmonary Pathology Collection

Neuroanatomy Collections

Yakovlev - Haleem Neuropathology and Development Collection
Blackburn - Newmann Collection
Lindenburg Forensic Pathology Collection
Welker Comparative Neuroanatomy Collection
Rubenstein Collection
Adolph Meyer Neuropathology and Development Collection
Isabel Lockhard Comparative Neuroanatomy Collection
The Pubols Anatomical Collection

HUMAN DEVELOPMENTAL ANATOMY CENTER (HDAC)

Tours

The Anatomy Center hosted 22 tours this past year. Visiting military VIPs, school tours, professional organizations, and AFIP staff have all come through the center.

Presentations

HDAC staff gave a total of 3 presentations this past year, with approximately 79 man-hours.
Courses/Conferences

On April 16-17, 1999, HDAC sponsored its third imaging conference, "Embryo Imaging and Education." The 2-day conference, cosponsored by the American Association of Clinical Anatomists, was held at the National Museum of Health and Medicine of the Armed Forces Institute of Pathology.

A total of 56 participants, including 18 speakers, attended the conference. An array of disciplines were represented, such as anatomy, cardiology, cell biology, neurobiology, structural biology, radiology, medicine, veterinary medicine, pediatric surgery, and medical illustration.

This year, the conference focused on the most effective ways to use imaging to teach embryology. Twelve presentations covered several areas of this topic, such as current imaging techniques being used in the curriculum, and new and emerging imaging technologies and their role in embryology education. In addition, 3 panel discussions were presented: a student panel, a professional panel, and an ethics panel. The panels successfully engaged both speakers and participants in discussions involving the current state of embryology education, the most successful methods of teaching embryology, the use of different imaging technology, and the issues arising from the sensitive nature of embryology.

In addition to the presentations and panel discussions, other activities included tours of the Human Developmental Anatomy Center and the Museum floor, and an evening reception for all participants and speakers.

June 1999, William Discher attended the American Association of Clinical Anatomists meeting in Iowa City, Iowa.

Web site

Expansion of the Web site is an ongoing project in HDAC. Three new sections were added, along with new information and images to current sections. New sections to the site include a history section (20 pages), reprints section (11 pages), and database section (6 pages). The history section provides information on the history of the Carnegie Collection and biographies of prominent researchers who first worked with the collection. The reprint section consists of 11 Carnegie reprints representing 11 different stages. The database section gives information on collection data sets, storage, imaging, and evaluation. Five new 3D CGI models with five organ systems each and 6 new animations were added to the anatomy section. A table of the different stages and their characteristics and the Arey-Dapena Pediatric Pathology database were also posted. Students, teachers, researchers, and members of the general public interested in human development visit the Web site.

RESEARCH

Seven visiting researchers used the collections for a total of 22 days this past year. Research topics covered the developing heart, oral and maxillofacial development, urogenital development, neuroanatomy, and tumors. Several AFIP staff requested information on SDS and pediatric pathology from the collection. The center had 12 remote requests for electronic data sets and 6 requests for images from the collection, requiring 3 staff days to process. Three-dimensional CGI models of embryos were sent, as well as historical information and photographs of prominent embryologists, to various researchers and publications. In addition, the Exploratorium in San Francisco requested a loan of HDAC's registration device.

Grants

"Human Embryology Digital Library and Support Tools" (phase 2), Part of the Next Generation Internet Project, funded by National Library of Medicine.

OTHER ACCOMPLISHMENTS

Acquisitions

Ten archival boxes of the Hertig Collection document material from the Museum's Otis Archives were transferred to the Anatomy Center to complement the Hertig Collection specimen material.

Conservation

A mobile aisle system was installed to create long-term storage for glass slides.

Collaborative Projects

The Human Developmental Anatomy Center continued its collaborative project with George Mason University, as it received second-phase funding of the grant "Human Embryology Digital Library and Support Tools." This grant is part of a next generation Internet project, funded by the National Library of Medicine. The goal is to develop prototype databases and other technologies to enable collaboration among multiple, distributed researchers, and to make progress towards advanced clinical and educational goals in human embryology. In addition, the center is in collaboration with the Louisiana State Univer-

sity Medical Center (LSUMC) on an educational project, "Human Embryo Sections on DVDs for Education." The objective of this project is to provide students, educators, and researchers accurate, inexpensive, and accessible visual information on human embryonic development. Aligned digital images of the serial sections of the best normal human embryos in the Carnegie Collection will be made available on computer disks (DVDs). The center continued its collaborative project with the Congenital Heart Research Center at Oregon Health Sciences University. The University of Illinois at Chicago continued a collaboration to produce a series of available animations depicting normal human development using models generated at the center. These will be viewed via Web site for teaching and patient information. As of January 1, 2000, this collaboration will become a part of the George Mason University grant. Dr. Dale Huff has been working with HDAC on the development of an electronic database for the Arey-Dapena Pediatric Pathology Collection. HDAC contributed collection images to illustrator Stephen Gilbert's "History of Embryology Illustration" video, to be used by Medical Illustration programs. HDAC staff member William Discher will be participating as an advisor on the grant with the Neuroanatomy Collections, "Magnetic Resonance Imaging of Dolphin, Porpoise, and Whale Brains."

Equipment

New equipment to the center includes an Infinite Reality for computer modeling and animation, and an Origin 200 with 100 Gig Raid to upgrade Web site capabilities and facilitate image serving.

PRESENTATIONS

1. April 8-9, 1999: Bethesda, Md., Uniformed Services University of the Health Sciences Research Day/Graduate Student Colloquium, "A historic perspective on reconstructive modeling of anatomical forms," presented by D Sweet. Authored by WF Discher, DA Sweet.
2. April 1999: Fairfax, Va, Seminar in Database Design, George Mason University, "Computational challenges within the National Museum of Health and Medicine and the Human Developmental Anatomy Center," EC Lockett.
3. October 14, 1999: Washington, DC, Applied Imaging and Pattern Recognition Conference '99, "An exploration of interfaces for the Human Embryology Digital Library," EC Lockett.

PUBLICATIONS

1. Noe A, Lockett E, Sweet DA. Use and evaluation as a tool to explore the Human Developmental Anatomy Center. *Computerized Medical Imaging and Graphics*. 1999;23:41-44.

NEUROANATOMICAL DIVISION

The Neuroanatomy Collections continue to be the recipient of National Science Foundation funding for electronic collection development.

Tours

In 1999, the Neuroanatomy Center hosted approximately 40 tours.

Presentations

Neuroanatomy Center staff gave a total of 3 presentations this year.

Web site

Presently, the University of Wisconsin-Madison and Michigan State University host the Web site. The Neuroanatomy Collections generate the information that is available on the site and the collections from which it is derived. Financial support for this Web site is provided by a grant from the National Science Foundation. In 1999, collection inquiries via the site increased 20%. The site receives about 90 hits per day from all over the world, including educators who use it as a curriculum development resource. Students used the it as a resource for science projects and for answering structural and functional questions about the brain. Due to the site, requests for collection images and visits to the collection and to the Museum have all increased.

RESEARCH

During 1999, the number of researchers visiting the collections totaled 140, which is a 15% increase over 1998. The total number of research days was 360. Increases in the above-mentioned areas can be attributed to walk-in researchers who obtained collection information via the Internet and curator member-

ship in neuroscience organizations. Visitor service representatives of the Museum provided important guidance for visitors to the collection. Elementary and secondary educators have shown an increased interest in using the collection in their classrooms.

The number of students taking part in various research activities increased by 15%. The Neuroanatomy Collections were instrumental in providing valuable educational experiences for students from local area high schools. These include Paint Branch High School (Silver Spring, Md), Hebrew Day Elementary School (Silver Spring, Md), Park View High School (Sterling, Va), Benjamin Banneker Middle School (Silver Spring, Md), DeMatha Catholic High School (Hyattsville, Md), and Piney Woods High School (Piney Woods, Md). In addition, the Howard County Technology Magnet Applications and Research Laboratory Program teamed up with the Neuroanatomy Collections and the Human Developmental Anatomy Center to develop internships. The internships will provide research opportunities for students attending the technical magnet programs at Long Reach High School in Columbia, Md, and River Hill High School in Clarksville, Md.

OTHER ACCOMPLISHMENTS

Loans

Yakovlev-Haleem Collection Library usage increased by 10%. The increase was due to students taking the Neuropathology Review Course and use by the Department of Neuropathology staff members.

Transfers

Archival documents found in the Yakovlev-Haleem collection library were transferred to Otis Historical Archives.

Conservation

The Neuroanatomy Center continued its wet tissue conservation for the Yakovlev-Haleem Collection and the Welker Comparative Neuroanatomy Collection. Conservation procedures are performed on a regular schedule, and fluids are changed as needed. In an effort to improve the conservation efforts, the wet tissue of the Yakovlev-Haleem Collection is being transferred to the Museum's off-site storage facility in Gaithersburg, Md.

The Blackburn-Newmann Collection wet tissue evaluation and conservation effort has been completed. As a result of this survey, the condition of the tissue, the type and condition of the fluid, and the condition of the containers were obtained. This information was used to develop a statement of work and a standard operating procedure for implementation of a complete conservation overhaul of all wet tissue specimens in the collection. Additional paper documents of the Blackburn-Newmann Collections were moved from the Department of Neuropathology and safely rehoused in map cases. This is an ongoing process.

Collection staff is currently examining the Welker Comparative Neuroanatomy Collection to identify conservation needs. This information will be used to develop a conservation plan.

The Yakovlev-Haleem library is being organized into new bookcases, and its contents are being evaluated. Some rehousing has taken place. This is an ongoing process.

Collaborative Projects

The Neuroanatomy Collections staff is in their second year of NSF-funded collaboration with Professor Wally Welker, PhD, of the University of Wisconsin-Madison and Professor John I. Johnson, PhD, of Michigan State University. The collaboration is supported by a 3-year grant from the National Science Foundation, which has provided a project technician to assist the curator with research and development projects. The grant has been identified by the National Science Foundation as one of its most productive projects.

National Geographic is using slides from the Yakovlev-Haleem Collection to generate images for a publication on the development of the brain. This publication will provide graphic illustrations of different neuropathologies.

Dr. Manuel Casanova, professor of psychiatry and neurology, Veterans Administration Medical Center, Augusta, Ga, and Dr. Daniel Buxhoevedan, assistant professor, Medical College of Georgia are using the collection in a project, "Quantitative Comparative Morphology of Cell Columns in Human and Non-human Primate Brains". The goal of this project is to compare organization of cell columns in the temporal region of humans to that of primates.

Dr. Lori Marino, associate professor of biology, at Emory University in Atlanta, Ga is collaborating with

neuroanatomy staff and human developmental staff on a research project titled "Magnetic Resonance Imaging (MRI) of Dolphin, Porpoise, and Whale Brains." The goal is to produce an electronic brain atlas for the Internet complete with 3D models. The atlas will be designed for both educational and research purposes.

The Neuroanatomy Collections and Dr. Kondi Wong received funding from the American Registry of Pathology for an Alzheimer's research project. This collaborative effort will reconstruct and quantitatively analyze an Alzheimer's case from the Yakovlev-Haleem Collection.

Equipment

Several PCs have been added to handle file transport process, image acquisition, data basing, brain specimen reconstruction, and digital cameras for graphic imaging. This equipment is available to researchers. During the course of the year, efforts were made to ensure that all computer software and hardware met Y2K requirements. Equipment and software that was not Y2K compliant was replaced. The new equipment also allows us to continue to send information via various media.

PRESENTATIONS

1. April 1999: Bethesda, Md, Uniformed Services University of the Health Sciences Research Day/Graduate Student Colloquium, "Museum resources for teaching of neuroscience," AJ Fobbs, A Noe, JI Johnson, WI Welker, BR Walker.
2. November 1999: Miami, Fla, Society for Neuroscience Annual Meeting "Three-dimensional reconstruction of cetacean (Dolphin, Whale, and Porpoise) brains from postmortem magnetic resonance images," AJ Fobbs, L Marino, JI Johnson, JA Morris.
3. April 1999: Bethesda, Md, Uniformed Services University of the Health Sciences Research Day, "Brain Library: primate brains—prototype of a CD-ROM for making available images of whole brains and stained sections from the brain collections Web site as a neuroscience teaching resource," AJ Fobbs, A Noe, WI Welker, CL Dizack, JI Johnson.